DACS clarity

HEADLITE 4

Four Channel Headphone Amplifier

USER GUIDE

Instructions for use and installation

Welcome

At DACS we are very pleased that you have chosen to purchase one of our products. We take pride in our work and are sure that this **HeadLite 4** will give you years of exemplary service. We're so confident our standard warranty is double the statutory one, and by registering, you can extend it for another year. Please visit our web site for details—www.dacs-audio.com. If you have any suggestions or comments about this product please e-mail sales@dacs-audio.com with your thoughts.

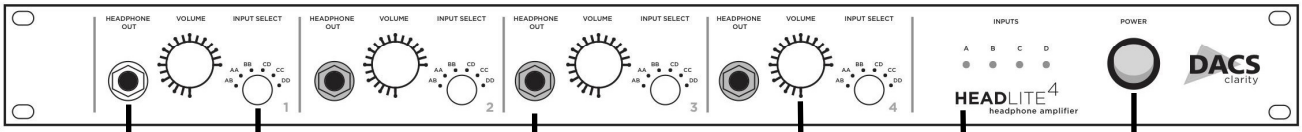
Thank you.

Introduction

HeadLite 4 is a four input, four output headphone amplifier, with a six position self-cleaning selector switch for each amplifier. It is designed to be as flexible as possible without introducing needless complexities. The DACS balanced inputs ensure very low distortion, and very good frequency response. The inputs are on three pole jacks; they will also accept unbalanced signals on 2 pole jacks. Its standard outputs can drive virtually any headphones; with the **+Power** module fitted to Channel 1 as standard, even the most demanding low impedance high power headphones are driven cleanly. The outputs are designed to drive down long lines to booths and live rooms with no loss of power or quality. The unit is compatible with -10dBV and +4dBu inputs (see Using the DACS **HeadLite 4** - "2 & 5 Inputs"). The **+Power** module will also drive multiple headphones - we have used up to 6 pairs of 400 Ohm headphones and experienced no level drop or quality loss.

Additional **+Power** modules can be fitted to other channels at the time of order or retrofitted any time after purchase. Please speak to your retailer or direct to us for details.

HeadLite 4



1 White +Power Channel Output

2 Input Select

3 Blue Standard Channel Output

4 Volume

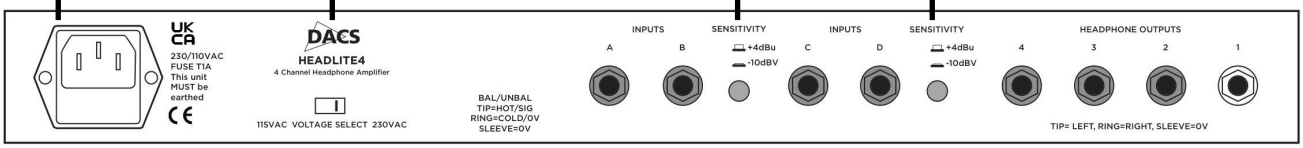
5 Input Level meters

6 Power

7 IEC inlet

8 Voltage Selector

9 Input Sensitivity switches of INs AB and CD



10 Inputs A, B, C, D

11 Headphone Outputs 1-4

Installation

6, 7, 8 Connecting the Power

The unit will accept 240 VAC and 110/115 VAC mains supplies via the fused IEC connector. The voltage selector switch selects which voltage the unit expects.

PLEASE ENSURE THE VOLTAGE SELECTOR SWITCH IS SET CORRECTLY BEFORE CONNECTING THE POWER.

2, 9, 10 - Inputs

Connections

Inputs A, B, C and D are on three pole ¼" jack sockets, (tip=+/Hot, ring=-/Cold and sleeve=0V). Unbalanced signals may be used on two pole jacks. The input impedance is 10k ohms. If no connector is plugged in, the inputs are shorted to 0V via the switch connections on the jacks. If the inputs are connected to a patchbay, it is advisable, if possible, to normalise them. Do this at the patch bay. If they are not normalised and are left floating, they may be prone to pick up interference, taxis or the radio over long lines between the unit and the patchbay.

Levels

The input buffer's sensitivity can be adjusted for +4dBu or -10dBV operation using the switches. Note: Channel A & B sensitivity are selected by one switch and Channel C & D sensitivity by the other. It is not possible to select different sensitivities for each one of the paired channels.

Protection

In the case of accidental patching of phantom power in OB applications we have included overvoltage protection on the inputs so 48V cannot damage the input stage.

1, 3, 11 Outputs

Connections

The headphone outputs are on three pole ¼" jacks, tip=left, ring=right, sleeve=0V. The front and rear outputs for each headphone amplifier are connected in parallel. The output circuitry is designed to drive down long lines with minimal high frequency loss. If you are sending headphones signals down long lines using screened twin conductor cable (such as foil screened twin, FST), we would recommend using two separate cables if you can. This would reduce any possible cross-talk between the left and right channels. There are installations we know of where left and right are sent down the two conductors of FST, and all reports have been good. If two or more pairs of headphones are to be driven by an output, they should be of the same type and impedance. If they are different (eg. low and high impedance), power sharing will not be even. One will be too quiet, and to achieve the required level in that pair, the other pair will potentially overload.

Remember that for headphone feeds, the screen must be connected at both ends of the cable.

9 Input Sensitivity Switches

On the rear panel, there are sensitivity switches for channels A&B and C&D. This allows user selection of sensitivity as an operational control; -10dB adds 12dB gain to the signal (-10dBV to +4dBu), while +4dBu adds no gain.

4 Volume Control

The HEADPHONE VOLUME control adjusts the signal level going to the amplifier. This control allows independent volume control of each amplifier's output. NOTE the rear headphone output connectors are in parallel with the front output connectors, so turning up Channel 1 will turn up both the front and back outputs.

Levels

The standard amplifier section can deliver up to 0.5W RMS per channel and has a fixed gain of 20dB. The Power+ channels can deliver over 4W per channel. NOTE The **+Power** channels are not louder than the standard channels; they can deliver a lot more power into low impedance loads. This means they will drive demanding planar magnetic and AMT headphones, as well as multiple higher impedance headphones (of the same type).

The volume potentiometer varies the input level to the amplifier stage. Too high an input level here will reduce the useful control over the output volume, since it will have to be set very low to ensure that the output does not clip. To adjust this level see below - 2 & 8 Inputs.

2 Input Select switch

With up to four inputs connected to the unit, decide which headphone amplifier output you wish to use. To select the input(s) you wish to listen to, rotate the selector switch to the appropriate point: AB means inputs A and B on the Left and Right output respectively; AA means input A on both Left and Right, etc. Plug your headphones in and adjust the volume to the your level.

5 Input Meters

These tri colour LED meters indicate the level on the 4 busses feeding the headphone amplifiers. They are calibrated as follows:

Green starts to glow at -24duB and is fully on at -8dBu to 0dBu
Orange starts at 0dBu and is fully on at +10dBu to +16dBu
Red starts at +16dBu and is fully on over +18dBu

For optimum performance operate HEADLITE 4 at 0dBu to +16dBu. With this recommended input level the volume potentiometer will generally sit between 9 and 12 o'clock.

6 Power

This switches the power on and off, with o indicating OFF and the vertical line indicating ON. The unit comes with a spare fuse in the fuse carrier (T1A). Clarity HEADLITE 4 is fitted with an ultra quiet regulated linear power supply.

Specifications

Noise floor:	<-90dBu (110dB below peak)
Dynamic range:	>114dB
THD+N 20Hz to 22kHz, +10dBu into 150R:	<.002%
CMRR:	>84dB 50Hz to 20kHz
Slew rate:	Greater than required for 40kHz
Frequency response:	5Hz to 40kHz ± .5dB
Max phase rotation (inter channel phase):	100Hz .01 deg, 1kHz .03 deg, 10kHz .36 deg, 20kHz .72 deg
Crosstalk:	<-90dB
Power output:	Standard channel >200mW/ch into 600R, **Power+** >4W into 20R
Dimensions (Boxed):	54cm x 43cm x 14cm
Weight (Boxed):	4.45kg
Dimensions (Unit):	1U Rack – 480mm x 45mm x 200mm